

CLAIMS

1. A substrate holding device for holding a substantially circular substrate having a circumferential cut part, comprising:

a hand body having a predetermined reference axis;

a supporting structure mounted on the hand body so as to face a circumferential edge of the substrate from below the substrate to support the substrate;

first and second guiding members mounted on the hand body and respectively having guiding surfaces which are in contact with an imaginary cylinder having an axis aligned with the reference axis and having a radius equal to a radius of the substrate;

first and second movable members capable of moving in an imaginary plane perpendicular to the reference axis and disposed on a radially outer side of the circumferential edge of the substrate so as to face the circumferential edge of the substrate; and

driving means configured to simultaneously displace the first movable member and the second movable member in the imaginary plane,

wherein the first guiding member, the second guiding member, the first movable member and the second movable member are spaced apart on a circumference of the imaginary cylinder at circumferential intervals each of which is greater than a length of an arc of a segment cut to form the circumferential cut part in a substrate holding state where the substrate is held by at least either of the first and the second guiding members and at least either of the first and the second movable members.

2. The substrate holding device according to claim 1, wherein each of the guiding surfaces of the first and the second guiding members has a radius of curvature substantially equal to the radius of the substrate and extends along the circumference of the imaginary cylinder.

3. The substrate holding device according to claim 1 or 2, wherein each of the first and the second movable members has a pressing surface having a radius of curvature substantially equal to the radius of the substrate and facing the circumferential edge of

the substrate from the radially outer side of the substrate, the pressing surfaces extending along the circumference of the imaginary cylinder in the substrate holding state.

4. The substrate holding device according to any one of claims 1 to 3, wherein:

the first guiding member and the first movable member are disposed in a point symmetrical positional relation with respect to the reference axis in the substrate holding state,

the second guiding member and the second movable member are disposed in a point symmetrical positional relation with respect to the reference axis in the substrate holding state, and

a straight line extending between the first guiding member and the second movable member and a straight line extending between the second guiding member and the first movable member are disposed so as to be parallel to moving directions of the first and the second movable members in the substrate holding state.

5. The substrate holding device according to any one of claims 1 to 4, wherein:

the supporting structure has a support surface for supporting the substrate thereon, the support surface sloping up outward along the radius of the imaginary cylinder, and

each of the first and the second movable members has a pressing surface to be pressed against the substrate, the pressing surface sloping down outward along the radius of the imaginary cylinder.

6. The substrate holding device according to any one of claims 1 to 5, wherein an open space is formed so as to open radially outward from the reference axis.

7. The substrate holding device according to any one of claims 1 to 6, wherein the supporting structure includes three support members to be brought into contact with the substrate, the support members being respectively arranged around the reference axis at angular intervals of 180° or below, the first and the second movable members being disposed on circumferentially opposite

sides, respectively, of one of the three support members, the first and the second guiding members being respectively mounted on remaining two support members.

8. The substrate holding device according to claim 7, wherein one of the three support members has a support surface of a circumferential length longer than the length of the arc of the segment cut off to form the circumferential cut part.